

Date: Mon, 2 Aug 93 19:13:48 PDT  
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>  
Errors-To: Info-Hams-Errors@UCSD.Edu  
Reply-To: Info-Hams@UCSD.Edu  
Precedence: Bulk  
Subject: Info-Hams Digest V93 #936  
To: Info-Hams

Info-Hams Digest                      Mon, 2 Aug 93                      Volume 93 : Issue 936

Today's Topics:

87.5 MHz signal in France  
Daily Solar Geophysical Data Broadcast for 01 August  
Earphone Phasing - an experiment (4 msgs)  
Emergency Power Off (2 msgs)  
Fox Hunts  
Handhelds on airplanes (3 msgs)  
Need route for DL5DCM  
Range? Portable Transceivers 2 Watt.  
SSB vs AM Peak Power (Was T50 Illegal!)

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>  
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

-----  
Date: 2 Aug 93 23:08:59 GMT  
From: ogicse!uwm.edu!spool.mu.edu!sgiblab!a2i!davidj@network.ucsd.edu  
Subject: 87.5 MHz signal in France  
To: info-hams@ucsd.edu

In <CB511v.JrM@hermes.hrz.uni-bielefeld.de> bsieker@techfak.uni-bielefeld.de  
(Bernd Sieker) writes:

>In article <CB4wLw.AnH@dcs.ed.ac.uk>, jhb@dcs.ed.ac.uk (John Butler) writes:  
>|>

>|> Has anyone any idea what the tones permanently resident on 87.5 MHz throughout  
>|> France are? At 87.5MHz FM there is a constant tone about 1 KHz which every so

>As far as I am informed this signal is present in Germnay, too and is

>just a sort of beacon that marks the lower edge of the FM Broadcast  
>Band in Europe (88 MHz to 108 MHz).  
>I was told that this was set up to simplify the adjusting of the  
>tuning capacitor's left edge when fine tuning the device in the  
>factory.

>The LF tone makes this 'cadence' to be not mistaken with some noise  
>signal that might be in the vicinity. If you tune a simple FM  
>broadcast receiver in Germany to the left edge, you very often hear  
>that sound.

>If anybody knows more (or better), please followup!

Paging. All over F, D, CH and NL. A four- or five-tone sequence  
similar to the original Reach pagers here, but carried on a low  
VHF channel, and slower than Reach or Motorola 5-tone.

--

David Josephson <david@josephson.com>

-----  
Date: 2 Aug 93 23:50:44 GMT  
From: news-mail-gateway@ucsd.edu  
Subject: Daily Solar Geophysical Data Broadcast for 01 August  
To: info-hams@ucsd.edu

!!BEGIN!! (1.0) S.T.D. Solar Geophysical Data Broadcast for DAY 213, 08/01/93  
10.7 FLUX=100 90-AVG=107 SSN=073 BKI=1000 0001 BAI=000  
BGND-XRAY=B2.3 FLU1=4.3E+05 FLU10=1.1E+04 PKI=1101 2222 PAI=004  
BOU-DEV=006,004,003,003,002,004,003,006 DEV-AVG=003 NT SWF=00:000  
XRAY-MAX= C1.3 @ 1816UT XRAY-MIN= B1.8 @ 0609UT XRAY-AVG= B3.3  
NEUTN-MAX= +001% @ 2335UT NEUTN-MIN= -003% @ 0205UT NEUTN-AVG= -0.4%  
PCA-MAX= +0.1DB @ 1815UT PCA-MIN= -0.3DB @ 2310UT PCA-AVG= -0.0DB  
BOUTF-MAX=55375NT @ 1443UT BOUTF-MIN=55333NT @ 1910UT BOUTF-AVG=55360NT  
GOES7-MAX=P:+000NT@ 0000UT GOES7-MIN=N:+000NT@ 0000UT G7-AVG=+086,+000,+000  
GOES6-MAX=P:+135NT@ 1659UT GOES6-MIN=N:-055NT@ 1757UT G6-AVG=+108,-017,-039  
FLUXFCST=STD:110,120,120;SESC:110,120,120 BAI/PAI-FCST=005,010,015/010,010,015  
KFCST=2224 3112 2224 3122 27DAY-AP=006,007 27DAY-KP=2311 2122 2113 2122  
WARNINGS=  
ALERTS=  
!!END-DATA!!

NOTE: The Effective Sunspot Number for 31 JUL 93 was 63.0.  
The Full Kp Indices for 31 JUL 93 are: 2- 3- 1o 1+ 2o 2- 2o 2o

-----

Date: Mon, 02 Aug 1993 15:30  
From: dog.ee.lbl.gov!overload.lbl.gov!agate!library.ucla.edu!news.mic.ucla.edu!  
MVS.OAC.UCLA.EDU!CSMSCST@network.ucsd.edu  
Subject: Earphone Phasing - an experiment  
To: info-hams@ucsd.edu

In article <1993Aug2.194444.14128@alw.nih.gov>,  
arm@helix.nih.gov (Andrew Mitz) writes:

>> [much omitted...]  
>Picking a signal out of the noise (QRN and QRM) is a complex process  
>called auditory scene analysis. It requires more than localization.  
>It would be interesting to build a circuit that makes different cw  
>signals (or voice signals) sound like they come from different locations  
>in space. It would make picking out the signal a lot easier, I suspect.

The high-end transceivers, like Yaesu's FT-1000 which I use, have dual receivers. The FT-1000 has a mode where each rx feeds one side of a pair of headphones. It is really interesting to use with a CW DX station working split. You tune the primary rx to the DX station, and the secondary rx to the pile up frequency. There is a very noticeable psuedo-sterio effect, with the dx station on one side of the room, and everybody (except the guy who forgot what split means) else on the other. It is very much easier to keep track of what is going on in the sterio mode than if one switches to mono.

You can also tune both rx to the same freq, and use different antennas. This produces effects best described as 'interesting' rather than 'useful'. It seems the human aural system doesn't make a very good voting reciever (selecting the less noisy signal.)

One of the mags (CQ?) a while back had a freq -> phase shift circuit for doing exactly what you contemplate above - making slightly different frequencys (again cw) have a different apparent spatial location. Always wanted to built it; never did.

-- 73 de Chris Thomas, AA6SQ (ex-WA6HTJ) (CSMSCST@MVS.OAC.UCLA.EDU)

-----

Date: 2 Aug 1993 22:04:32 GMT  
From: news.graphics.cornell.edu!newsstand.cit.cornell.edu!  
newsstand.cit.cornell.edu!usenet@tcgould.tn.cornell.edu  
Subject: Earphone Phasing - an experiment  
To: info-hams@ucsd.edu

In article <1993Aug2.194444.14128@alw.nih.gov> Andrew Mitz,

arm@helix.nih.gov writes:

>Picking a signal out of the noise (QRN and QRM) is a complex process  
>called auditory scene analysis. It requires more than localization.  
>It would be interesting to build a circuit that makes different cw  
>signals (or voice signals) sound like they come from different locations  
>in space. It would make picking out the signal a lot easier, I suspect.  
>Just a thought, I have no (good) idea how to do it!

>

>-- Andy Mitz

> WA3LTJ

> MSEE

> PhD, neurophysiology (I might have guessed!)

>

A discussion just started up in rec.radio.amateur.homebrew on building a system described a number of years back that used a low pass filter to the left ear and high pass filter to the right, giving you 'spatial' differentiation of signals at different tones. The original author claimed that it made picking one cw signal out of a group in the filter passband much easier since they appeared to come from different locations. From your posting, sounds like that might well be true.

Someday I'll get time to build one of those...

73 de Kevin, WB2EMS (fkf1@cornell.edu)

-----

Date: Tue, 3 Aug 1993 01:12:27 GMT

From: spool.mu.edu!olivea!sgigate!odin!odin.corp.sgi.com!watson@decwrl.dec.com

Subject: Earphone Phasing - an experiment

To: info-hams@ucsd.edu

Listening to audio from any source with a phase difference between ears just drives me crazy. Always has. Like some people react to fingernails on blackboards.

I read "The Complete DXer" and at first couldn't believe the advice to wire headphones out of phase for enhanced CW copy. Then I realized maybe other people can stand listening to stereo 180 degrees out of phase.

Now I'm curious: do many other people suffer this same out-of-phase aversion?

-D.

-----

Date: Tue, 3 Aug 1993 01:28:31 GMT

From: pravda.sdsc.edu!news.cerf.net!usc!sdd.hp.com!col.hp.com!news.dtc.hp.com!  
srgenprp!alanb@network.ucsd.edu  
Subject: Earphone Phasing - an experiment  
To: info-hams@ucsd.edu

F. Kevin Feeney (fkf1@cornell.edu) wrote:

: In article <1993Aug2.194444.14128@alw.nih.gov> Andrew Mitz,  
: arm@helix.nih.gov writes:  
: >Picking a signal out of the noise (QRN and QRM) is a complex process  
: >called auditory scene analysis. It requires more than localization.  
: >It would be interesting to build a circuit that makes different cw  
: >signals (or voice signals) sound like they come from different locations  
: >in space. It would make picking out the signal a lot easier, I suspect.  
: >Just a thought, I have no (good) idea how to do it!  
: >  
: A discussion just started up in rec.radio.amateur.homebrew on building a  
: system described a number of years back that used a low pass filter to  
: the left ear and high pass filter to the right, giving you 'spatial'  
: differentiation of signals at different tones. The original author  
: claimed that it made picking one cw signal out of a group in the filter  
: passband much easier since they appeared to come from different  
: locations. From your posting, sounds like that might well be true.

The low-pass/high-pass filter idea would also cause different phases to  
appear at the two ears. The combination of different amplitudes and  
phases might simulate stereo pretty well...

AL N1AL

-----  
Date: 2 Aug 93 22:41:22 GMT  
From: ogicse!emory!rsiatl!jgd@network.ucsd.edu  
Subject: Emergency Power Off  
To: info-hams@ucsd.edu

gary@ke4zv.uucp (Gary Coffman) writes:

>We call it a GFI, Ground Fault Interrupter.

>Ground must be ground, so it normally is wired so that no  
>current flows through it that can cause a potential difference by  
>ohmic loss. A GFI is configured to measure current flow in this  
>third wire. If it exceeds a minimum value, it trips the hot lead  
>out of circuit. This is all fine and dandy unless someone has made  
>a wiring error and swapped hot and neutral. In that case, you can  
>still be dead meat.

Not true. Earth ground is NOT needed for and is not involved in proper GFI operation.

GFIs work by measuring any asymetry in current flow that may exist between the hot and neutral leads, the assumption being that any current not making the return trip is going somewhere it does not belong.

The most common way of detecting this imbalance is with a longitudinal transformer. This consists of a core with two primary windings and one secondary. One primary conducts the hot leg and the other conducts the neutral. They are phased so the fields cancel. Therefore when the current is balanced (everything going out comes back) there is no current induced in the secondary. If some of the current finds an alternate route back to ground, the currents in the primaries are unbalanced and current is induced in the secondary. This secondary current is measured and when it exceeds a set value, the GFI trips.

John

--

John De Armond, WD40QC		(Pardon the inconvenience while we
Performance Engineering Magazine(TM)		remodel this .signature)
Marietta, Ga		
jgd@dixie.com		

-----

Date: Tue, 3 Aug 1993 00:35:42 GMT  
From: saimiri.primite.wisc.edu!sdd.hp.com!col.hp.com!news.dtc.hp.com!srngenprp!  
mikew@ames.arpa  
Subject: Emergency Power Off  
To: info-hams@ucsd.edu

Ground fault interrupters do indeed measure the difference in line-to-neutral current, not the ground current per se. They do this by passing line and neutral conductors through a toroidal transformer core; these become two (common-mode) single turn primaries. The secondary coil (many turns around the toroid) trips a breaker if the difference of the hot and neutral current is greater than ~5mA.

There are GFCIs for 220 volt use, but they're rare. I was considering using one for my swimming pool pump motor, but decided it was easier to run the pump on 110V instead and eat the extra  $I^2R$  loss.

Regarding 220V wiring: I believe the requirement of the NEC is that you may run three wire 220 (hot1-hot2-gnd) ONLY if the appliance has no 110 volt circuits; hence Al's stove is a flagrant violation...

presumably the code was a bit more lenient once upon a time. Many electric clothes dryers are hooked up this way with 3 prong plugs.

For most 220 circuits that include 110V taps, you must run four-wire 220 (hot1-hot2-neut-gnd). A modern stove with 220V burners and a 110V vent fan fits this category.

Note that the safety ground is never omitted from 220V wiring, but sometimes the neutral conductor is.

-mike

-----  
Mike Weihman    mikew@sad.hp.com    N1DJE

Hewlett-Packard Co.		ARES/RACES EC, Rohnert Park/Cotati, CA
Santa Rosa Systems Division		
1212 Valley House Drive		Firefighter/EMT-D
Rohnert Park, CA 94928 USA		Penngrove Fire Protection District
(707) 794-4454		Penngrove, CA

-----

-----  
Date: 2 Aug 93 23:01:24 GMT  
From: rit!isc-newsserver!ritvax.isc.rit.edu!MDS5597@cs.rochester.edu  
Subject: Fox Hunts  
To: info-hams@ucsd.edu

I am very interested in Fox Hunts. I went on one in my waiting period last summer. It was great!! Does anyone go to these? Do you know of any catalogs that specialize in this sport?

Trekky

NNN	NNN	8888888888	VV	VV	FFFFFFFFFFFF	ZZZZZZZZZZZZ		
NNNNN	NNN	888	888	VV	VV	FFFFFFFFFFFF	ZZ	
NNN	NN	NNN	88	88	VV	VV	FF	ZZ
NNN	NN	NNN	888888	VV	VV	FFFFFFF	ZZ	
NNN	NN	NNN	88	88	VV	VV	FFFFFFF	ZZ
NNN	NNNNN	888	888	VVVV	FF		ZZ	
NNN	NNNN	8888888888	VVVV	FF			ZZZZZZZZZZZZ	

P.S.

----  
Live long and prosper.

Date: 2 Aug 93 23:05:37 GMT  
From: ogicse!uwm.edu!spool.mu.edu!sgiblab!a2i!davidj@network.ucsd.edu  
Subject: Handhelds on airplanes  
To: info-hams@ucsd.edu

In <23jl3v\$271@panix.com> oppedahl@panix.com (Carl Oppedahl) writes:

>As you know, transmitting while on board a commercial aircraft is  
>a no-no. The pilot does not have the power to let you do it.

>On a private plane, you would have to satisfy Part 97, with  
>permission of pilot etc.

I thought this thread was finished long ago. True, the pilot alone does not have the power to let you transmit on board a commercial airliner. But if the holder of the air transport certificate (the airline) has so instructed pilots, they may authorize the operation of any portable electronic device they wish. Certain commercial and common-carrier RF devices, specifically cellular phones, are prohibited by FCC regulation from being used while airborne, but amateur transmissions are not so controlled, and a few air carriers will still permit their pilots to approve amateur operations enroute. Ask the airline what their policy is. I have seen no prohibition of this in either part 121 (normal air carriers) or part 135 (air taxi).

--

David Josephson <david@josephson.com>

-----

Date: 2 Aug 93 23:45:00 GMT  
From: news!sun1.clark.net!andy@uunet.uu.net  
Subject: Handhelds on airplanes  
To: info-hams@ucsd.edu

: If I am flying there, I would like to be able to put my radio in my carry  
: on luggage, and I was wondering if there were any problems with doing this.  
: I realize that they will probably shoot you if you start transmitting or  
: such while on the plane, but I would like to know if airport security will  
: let you on the plane with it in carry on luggage.

If you carry your radio (of any type) onto the aircraft, even if you have no intention of using it in flight, be sure it works. You may have to switch it on for the security check, to prove the innards have not been cleared out to make room for a "you-know-what." On a recent trip to Seattle, I had to turn on not only my HT, but also my mini-Sony camcorder. The security officer wanted to actually look thru the viewfinder.

-----



Date: 2 Aug 93 19:24:45 EST  
From: titan.ksc.nasa.gov!k4dii.ksc.nasa.gov!user@ames.arpa  
Subject: Handhelds on airplanes  
To: info-hams@ucsd.edu

In article <23jgtq\$eqo@news.bu.edu>, david@bu.edu (David Gagnon) wrote:

>  
> In the hopefully not too distant future I will be receiving my amateur radio  
> license, and I would like to be able to take my 2m handheld when I go on  
> vacation or a business trip.

David-

As I understand the US rules, it is OK to have a radio on board an aircraft, but NOT to transmit with it. However, some security/baggage checking people may still give you a hard time.

I carried a ten watt mobile radio on an aircraft once. I was going across the state to pick up a car. I was barely able to talk the inspectors out of opening up the radio to verify that the "battery" was removed! At that time, they apparently had orders to be sure that any hand-held carried on board, had the battery disconnected, so no accidental transmission could occur.

If a misinformed security guard gives you a hard time, you must be careful not to upset them. I have heard of some cases of people landing in jail for fairly innocent things, when they voiced too loud an objection. This problem could be extremely serious in a foreign airport.

Life isn't fair!

73, Fred, K4DII

-----  
Date: Tue, 3 Aug 1993 01:28:58 GMT  
From: psinntp!gdstech!gdstech!bat@uunet.uu.net  
Subject: Need route for DL5DCM  
To: info-hams@ucsd.edu

My 93 callbook does not have this one. I need the route for DL6DCM (the spouse) also, assuming they might be the same. Perhaps our European friends can help me with this address.

--

\*-----\*  
\* Pat Masterson D12-25 | KE2LJ@KC2FD \*  
\* Grumman Data Systems | 516-346-6316. \*

\* Bethpage, NY 11746 | bat@gdstech.grumman.com \*

-----

Date: 31 Jul 1993 02:17:46 GMT  
From: elroy.jpl.nasa.gov!sdd.hp.com!col.hp.com!csn!news.sinet.slb.com!news.San-Jose.ate.slb.com!jones@ames.arpa  
Subject: Range? Portable Transceivers 2 Watt.  
To: info-hams@ucsd.edu

Jason Lee Davis KB5YBP (jdavis@merlin.etsu.edu) wrote:  
: Russ Curry (curry@sctc.com) wrote:

: > Roughly speaking, what's the effective transmit range  
: > of those little Handheld Transceivers ( 2 Watt/ 2 Meter )  
: > in miles ( under optimal conditions? )

: > Thanks,

: > Russ Curry  
: > ( curry@sctc.com )

: Hello Russ,  
: I've got an HT with 2.5W out using the built-in battery. Under normal  
: conditions, about 10 miles is all I can really count on getting a readable  
: signal out. I can hit a repeater about 20 miles from me but that's only  
: "hitting" it. With an external battery to get the HT's full 5W output and  
: an external homemade j-pole antenna, I have talked to a station simplex about  
: 90 miles during a band opening. BTW, my HT is a Kenwood TH-28A. I'm not  
: sure where you're QTH is, but, around the southern part of the country, there  
: have been some major band openings on 2m the last few nights/mornings.

: 73, Jason

Gents:

In my experience, there are three factors affecting how far you can get with an HT (or any other radio for that matter): By far the most important is the height of the antenna (when I'm on my roof, working on the A/C, the HT can hit repeaters 40 miles away "full quieting" with a mere 2W, and they come in at S9+, with just the "rubber dummy load" antenna). The next most important thing is the antenna. With a 5/8wave end-fed telescoping antenna, (i.e., an AEA Hot-Rod), I can carry on conversations on repeaters over 100 miles away, though it is very sensitive to my location (i.e., nearest building is over 1 mile away in the direction of the repeater, and the repeater is on a high mountain), and it is about 70% quieting (and about S6 on my meter), again this is at two watts. Last and least important factor is power. From the back yard of my house, I need both the "Hot Rod" and 5W out to bring

in the repeaters I can hit with rubber-leaky-dummy-load from the roof.

73,  
Clark

--

Disclaimer: The opinions expressed above are mine and not those of Schlumberger because they are NOT covered by the patent agreement!

Phone: (602) 345-3638                      Internet: jones@sj.ate.slb.com  
Packet: N7RPQ@K7BUC.AZ.USA.NA              RF: N7RPQ  
Snail: Clark Jones, Schlumberger Technologies, 7855 S. River Pkwy #116, Tempe,  
AZ 85284-1825

-----  
Date: Tue, 3 Aug 1993 01:36:48 GMT  
From: elroy.jpl.nasa.gov!sdd.hp.com!col.hp.com!news.dtc.hp.com!srngenprp!  
alanb@ames.arpa  
Subject: SSB vs AM Peak Power (Was T50 Illegal!)  
To: info-hams@ucsd.edu

I decided to start a new string since this has drifted way away from the original subject.

Erik van Bronkhorst (erik@peewee.chinalake.navy.mil) wrote:

: ... What is the relative  
: PEP of an SSB signal versus AM that creates an equivalent amount of  
: heat in a resistive load?

It depends on the modulation waveform. For sine-wave modulation, the SSB signal is a constant-amplitude RF signal. Peak Envelope Power (PEP) = average power = power dissipated in a resistive load.

For an AM signal with 100% sine-wave modulation, power in the sidebands is 1/2 the carrier power, so power dissipated in the load = 1.5 times carrier power. PEP is 4 times carrier power. So the ratio of PEP to average dissipation in the load is  $4 / 1.5 = 8/3 = 2.67$ .

What is more interesting is to compare "talk power" of the two methods. Assuming the transmitter is limited by its PEP rating (rather than average power rating), the sideband power with SSB is equal to PEP. With AM, sideband power is 1/2 the carrier or 1/8 PEP, for a 9 dB disadvantage.

[To further complicate matters, the two sidebands in AM combine in the receiver's detector to give 1.4 times (+3 dB) the detected audio

compared with an SSB signal with the same total sideband power.  
However, the AM receiver needs twice the IF bandwidth which causes  
a 3 dB degradation in signal-to-noise ratio, so we're still left with  
a 9 dB advantage for SSB.]

AL N1AL

-----  
Date: Mon, 2 Aug 1993 22:57:15 GMT  
From: swrinde!cs.utexas.edu!usc!sol.ctr.columbia.edu!spool.mu.edu!sgiblab!a2i!  
davidj@network.ucsd.edu  
To: info-hams@ucsd.edu

References <744135015snx@bsdihi.atr.bso.nl>,  
<930801.223119.5n2.rusnews.w165w@garlic.sbs.com>, <23jc2qINNq8i@rosebud.ncd.com>~p  
Subject : Re: HELP, PC RADIATES ...QRM

Still available in San Jose, a few TEMPEST-qualified very low radiation  
IBM-XT's, with mono or CGA monitors and keyboards, with all of the above  
mentioned shielding techniques already done. \$99 for the basic unit  
including mono monitor, keyboard and 1 360K floppy. This is the normal big  
XT motherboard, so you can put anything in it you'd like. They also have  
cases and power supplies alone for \$20-25, I think.

Advanced Component Electronics, 1534 Berger Drive, San Jose CA 95112,  
408-297-1383. I have no connection with them except as a satisfied  
customer.

--  
David Josephson <david@josephson.com>

-----  
End of Info-Hams Digest V93 #936

\*\*\*\*\*